



Veterans Health Administration
Research & Development
Improving Veterans' Lives www.research.va.gov

Opportunities for Observational Research With VHA Data

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Presentation

- Veterans Health Administration (VHA),
- Office of Research & Development (ORD),
- Veterans Health Information Systems & Technology Architecture (VISTA),
- Barriers to using VHA data for research,
- Center for Scientific Computing (CSC),
- Consortium for Healthcare Informatics Research (CHIR),
- Central IRB (C-IRB),
- Observation research on bariatric surgery.

VHA Characteristics

- Serve ~ 5.3 million vets annually (increased from ~ 3m in 1995),
- 153 Hospitals, 900 Free Standing Clinics, 135 Nursing Homes, 210 Readjustment Counseling Centers,
- Trained ~ 1/3 of all practicing MD's,
- ~ \$37 billion budget.

VHA Characteristics

- ~ 200,000 employees:
 - RN's = 55k
 - MD's = 15k
 - Pharmacists = 4.5k
 - Dentists = 1k
- Hospitalizations FY '07 ~ 580k
- Outpatient Visits FY '07 ~ 61m

Research Branches Within VA Office of Research & Development (ORD)

- **Biomedical** Laboratory R&D Service (BLR&D)
- **Clinical** Science R&D Service (CSR&D)
- **Rehabilitation** R&D Service (RR&D)
- **Health Services** R&D Service (HSR&D)

ORD: An Intramural Research Program

- PI's (~ 3000) must be 5/8th's VA,
- Co-investigators may be non-VA,
- Research emphasis is “veteran centric”, e.g.,
 - Post deployment health
 - Complex common diseases
 - Women's health
 - Access to care
 - Mental health (particularly PTSD)

VHA FY '08 Research Budget

• ORD ¹	~ \$500 m ^{2,3}
• VA Medical Care	~ \$410 m
• Other Federal	~ \$710 m
• Non Federal	<u>~ \$205 m</u>
Total	~ \$1.825 b

- ¹ Office of Research & Development
- ² Excludes overhead & MD salaries
- ³ HSR&D ~ \$90m

The VA is for Researchers Who Love Data

ZTEST,PATIENT DELTA
000-00-0004 Dec 07,1899 (101)

Visit Not Selected
Provider: BROWN,STEVEN H

TEST TEAM / Brown,Steven H

Remote Data Postings WAD

- Active Problems
- Atrial Fibrillation
 - Gastritis
 - Arrhythmia
 - Congestive Heart Failure
 - Constipation
 - Elevated Psa
 - Low Back Pain * (icd-9-Cm 724.2)

- Allergies / Adverse Reactions
- Lasix
 - Haldol
 - Penicillin
 - Feathers
 - Milk
 - Aspirin
 - Bee Sting

- Postings
- Allergies
 - Pt Has Conservator Mar 26,01
 - Clinical Warning Mar 15,01
 - Do Not Resuscitate Mar 02,01
 - Rx Refill Followup Sep 29,00
 - Rx Refill Followup Sep 27,00
 - Research Subject Mar 03,00

Active Medications

No active medications found

Clinical Reminders	Due Date
V9 Annual/High A1C	DUE NOW
V9 Diabetic Eye Referral	Feb 02,00
V9 Depression Screening Positive	DUE NOW
V9 CHF with A-Fib	DUE NOW

Recent Lab Results

Inr - Fingerstick (na) Blood, Capillary Sp Lb #587551	
Urinalysis* Urine Sp Lb #488391	Jan 08,01

Vitals

T	99.2 F	May 10,01	(37.3 C)
P	82	May 10,01	
R	18	May 10,01	
BP	132/76	May 10,01	
HT	72 in	May 10,01	(182.9 cm)
WT	220 lb	May 10,01	(100.0 kg)

Enter Vitals

Appointments / Visits / Admissions

Jun 13,01 10:00	Mu-Test	Checked
May 23,01 14:44	Kn-Tele Care/Ancillary/Knox	CH
Apr 18,01 09:31	Zzz-Ch-Akmal(chat)	Checked
Mar 14,01 14:07	Kn-Telephone/Pharmacy/Knox	CH
Jan 31,01 14:30	Na-Telephone Consults/Pharm	CH
Jan 22,01 08:30	Mu-2507 Medical Exam Clinic	CH

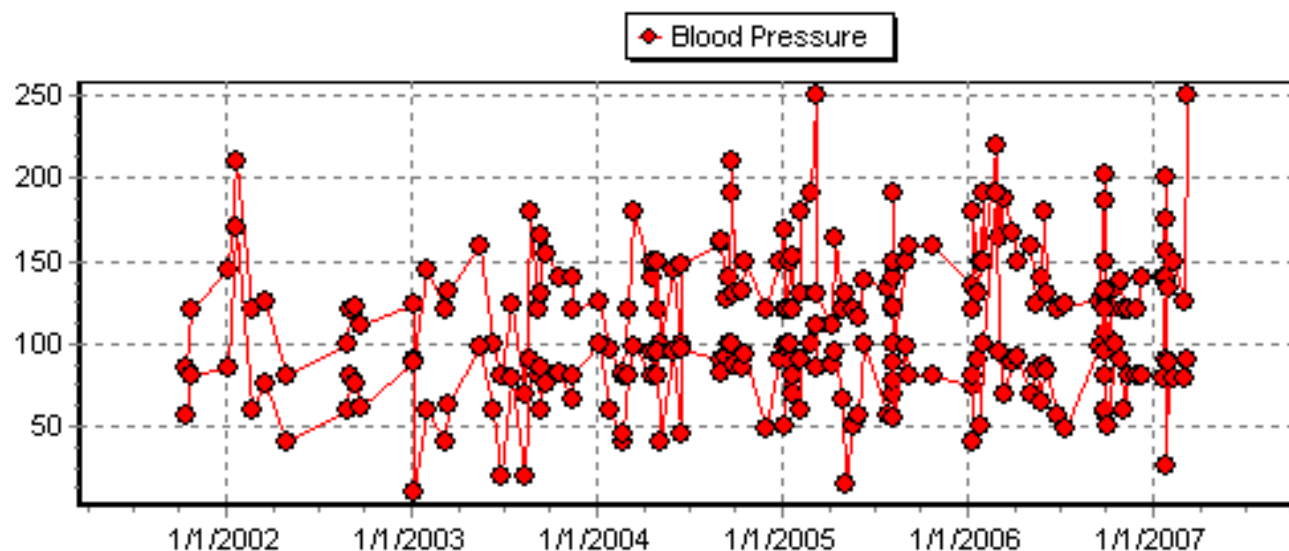
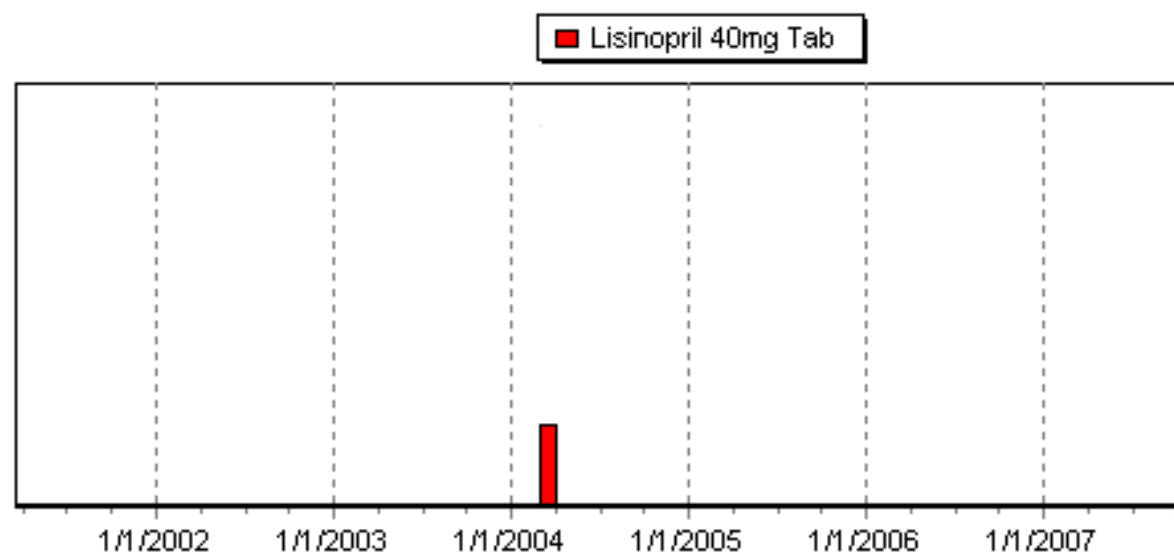
Cover Sheet / Problems / Meds / Orders / Notes / Consults / D/C Summ / Labs / Reports / Forms



View: Individual Graphs

<view1>

Item	Type
Hand	Rad
Hip Films In The ...	Rad
Knee Series	Rad
Lumbar Spine Ser...	Rad
Mri Brain Wo Con...	Rad
Mri Brain Wo&w C...	Rad
Myocardial Infarct...	Rad
Myocardial Perfus...	Rad
Myocardial Perfus...	Rad
Nm Renal Scan (f...	Rad
Renal Scan (dtpa...	Rad
Rest Muga	Rad
Skull Series	Rad
Tibia & Fibula	Rad
Unlisted Musculo...	Rad
Us Abdomen	Rad
Body Mass Index	Vital
Central Venous Pr...	Vital
Circumference/Gi...	Vital
Height	Vital
Pain	Vital
Pulse	Vital
Pulse Oximetry	Vital
Respiration	Vital
Temperature	Vital
Weight	Vital



Date Range: All Results

Split Views

Select/Define...

Settings...

Close

Data Added to VISTA

<u>Information Characteristic</u>	<u>Added per Workday</u>	<u>Added in 2006</u>
• Progress Notes,		
• Discharge Summaries	+638k	874 M
• Orders	+955k	1.65 B
• Images	+884k	590 M
• Vital Signs	+729k	1.06 B
• Inpt Meds Administered	+607k	850 M

Summary of VA Strengths

- National health care system,
- EMR with ~ 10 years of data,
- Accessible centralized & regional databases,
- Strong research tradition, outstanding researchers, research funding, & academic affiliations,
- Tradition of medical center research collaboration & infrastructure support,
- Tradition of quality improvement,

Barriers to Use of VHA Data for Research

- Data security & privacy,
- Need for multicenter IRB review,
- Integration of non-VA data into VA databases (e.g., Medicare, DoD),
- Sharing VA medical data.

Center for Scientific Computing (CSC)

Center for Scientific Computing (CSC) Research Initiative

Data Sources



Advantages of CSC Concept

- More data available than ever before,
- Data security & privacy will be enhanced because of remote access structure,
- Real time mirror with clinical data will permit real time clinical application & decision support research,
- Availability of text data will greatly broaden research potential,
- Computing power will permit complex modeling,
- Technical computer advances will be rapidly available for use,
- Rapid sharing & dissemination of informatics products will facilitate research progress.

Consortium for Healthcare Informatics Research (CHIR)

Barriers to Informatics Research

- No prior research emphasis on informatics,
- Informatics expertise dispersed across VA research sites,
- Substantial health information in text data format:
 - physician, nursing, pharmacist progress notes,
 - radiology, pathology, cardiology reports,
 - bacteriology antibiotic sensitivity data,
 - hospital discharge summaries,
 - adverse event descriptions.

Medical Informatics Research Initiative

- Create a virtual informatics research consortium,
- Extract, cleanse, reformat, de-identify text,
- Prepare text for data mining
- Apply text processing to clinical issues,
- Encourage non-consortium investigators to develop informatics research projects that include text data.

Central IRB

VA Central IRB

- **Membership:**
 - IRB members from throughout the US, & expert ad hoc advisors.
- **Advantages:**
 - IRB members trained to review multi-site studies,
 - facilitates consistent expert ethical & scientific review,
 - facilitates identification of trends in AE's,
 - improves multi-site IRB review efficiency,
 - provides centralized investigator accountability,
 - eliminates potential local conflict of interest,
 - reduces time to obtain research results.

Summary

- VHA has extensive, accessible, rapidly increasing longitudinal health data,
- Barriers to data utilization for research exist,
- The CSC, CHIR, and C-IRB are designed to reduce these barriers,
- VA observational research opportunities are extensive.



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